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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,174	09/18/2003	Mallikarjun Chadalapaka	200312982-1	8720
22879 7590 05/14/2009 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400				
EXAMINER				
DAILEY, THOMAS J				
ART UNIT		PAPER NUMBER		
2452				
NOTIFICATION DATE		DELIVERY MODE		
05/14/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/666,174

Applicant(s)

CHADALAPAKA, MALLIKARJUN

Examiner

Thomas J. Dailey

Art Unit

2452

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-23 are pending.

Response to Arguments

2. The declaration under 37 CFR 1.132 filed 2/4/2009 is sufficient to overcome the rejection of claims 1-23 based upon the Ko reference ("Technical Overview of iSCSI extensions for RDMA (iSER) & Datamover Architecture for iSCSI (DA)," Wendt, Mike; RDMA Consortium, July 21, 2003; accessed <http://www.rdmaconsortium.org/home/iSER_DA_intro.pdf>) applied under 35 U.S.C. 102(a) in the previous action.
3. The 35 U.S.C. 112 second paragraph rejections have been withdrawn in view of the applicant's entered amendments.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 22 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

6. Claim 22 recites, "An apparatus...comprising: means for receiving... means for determining... means for sending... means for setting a variable" As the claimed invention may be interpreted and implemented as software alone when read in light of the specification, the invention is directed to functional descriptive material (e.g. software per se) that is not tangibly embodied on a computer system which is non-statutory. Specifically, the "means for" in each of the recited limitations may simply be protocol layers; see, for example, claim 1.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
8. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over J. Wendt et al. (Data Integrity PowerPoint presentation entitled "iSCSI-R Data Integrity," slides 1-36, Version 1d, Oct. 4, 2002), hereafter "Wendt," in view of Satran, Julian et al. (Internet Draft entitled "iSCSI," Sept. 5, 2002), hereafter "Satran."
9. As to claim 1, Wendt discloses an apparatus for acknowledging a data transfer, comprising:

a processor configured to transfer data according to a plurality of protocols of a protocol stack (Slide 3, Figure labeled "iSCSI-R" "Initiator") comprising:

a first protocol layer to initiate a request for a data transfer (Slide 3, labeled "iSCSI-R" "Initiator" with "iSCSI" reading on the first protocol layer);

and a second protocol layer (Slide 3, Figure labeled "iSCSI-R" "Initiator" "iSER" reading on "a second protocol layer") to:

receive the request for the data transfer from the first protocol layer (Slide 3, Figure labeled "iSCSI-R" "Initiator"; iSCSI commands are encapsulated (i.e. "received" from one protocol layer to another) to include iSER related data, as in Slide 13); and

send a performance request corresponding to the request for data transfer to a third protocol layer (Slide 3, Figure labeled "iSCSI-R" "Initiator" "RDMA" reads on "third protocol layer"; Slide 4, section 3, CRC's (i.e. performance requests) are carried in the RDMA layer of the messages, see also Slide 12).

But, Wendt does not disclose determining with the request for the data transfer contains a request for acknowledgment of completion of the data transfer and if the request for data transfer does contain a request for acknowledgement of the completion of the data transfer, setting a variable in memory to wait for an event to correspond to the completion of the request for data transfer and sending an acknowledgement to the first protocol upon the occurrence of the event.

However, Satran discloses the use of iSCSI over other protocol layers (page 23-24, section 2.2.1 Layers and Sessions) including requests for data transfers using the iSCSI protocol which contain a request for acknowledgment of completion of the data transfer (page 156, section 9.7.2, "A (Acknowledge) bit", first paragraph, "For sessions with...") and if the request for data transfer does contain a request for acknowledgement of the completion of the data transfer, setting a variable in memory to wait for an event to correspond to the completion of the request for data transfer and sending an acknowledgement to the first protocol upon the occurrence of the event (page 156, section 9.7.2, "A (Acknowledge) bit", first paragraph, "For sessions with..."; "A bit" reads on variable set in memory).

Therefore it would have been obvious at the time of the applicant's invention to combine the teachings of Wendt and Satran in order to increase reliability in the Wendt's system through the use of acknowledgments and A bits as disclosed in Satran.

10. As to claims 8, 16, and 22-23, they are rejected by a similar rationale set forth in claim 1's rejection.

11. As to claims 2 and 17, Wendt discloses the first protocol is an internet small computer systems interface ("iSCSI") protocol (Slide 3, Figure labeled "iSCSI-R" "Initiator" "iSCSI").
12. As to claims 3 and 13, Wendt discloses the second protocol is an internet small computer systems interface extensions for remote direct memory access ("iSER") protocol (Slide 3, Figure labeled "iSCSI-R" "Initiator" "iSER").
13. As to claims 4 and 14, Satran discloses the request for the data transfer comprises an attribute that indicates the request for acknowledgement of completion of the data transfer (page 156, section 9.7.2, "A (Acknowledge) bit", first paragraph, "For sessions with..."; "A bit" reads on variable set in memory).
14. As to claim 5, Satran discloses a value of an error recovery level is notified to the second protocol from the first protocol (page 222, Section "11.20 ErrorRecoveryLevel).
15. As to claims 6 and 18, Wendt discloses the third protocol is a remote direct memory access ("RDMA") protocol (Slide 3, Figure labeled "iSCSI-R" "Initiator" "RDMA").

16. As to claims 7 and 19, Wendt discloses the event relates to a zero length remote direct memory access ("RDMA") read completion (Slide 26).
17. As to claim 9, Wendt discloses receiving the performance request that corresponds to the data exchange request (Slide 3, Figure labeled "iSCSI-R" "Initiator" "RDMA" reads on "third protocol layer"; Slide 4, section 3, CRC's (i.e. performance requests) are carried in the RDMA layer of the messages, see also Slide 12).
18. As to claim 10, Wendt discloses a remote direct memory access network interface card ("RNIC") that is used by the protocol stack to exchange the message between the at least one of the plurality of systems and the at least one input/output device via the network (Slide 34, RNIC labels).
19. As to claims 11 and 20, Wendt discloses the message is a remote direct memory access ("RDMA") write message (Slide 21).
20. As to claim 12, Wendt discloses the message is a zero length remote direct memory access ("RDMA") read message (Slide 26).
21. As to claim 15, Wendt discloses the process operates according to a small computer systems interface protocol ("SCSI") (Slide 1).

22. As to claim 21, Satran discloses establishing an error recovery level by the first protocol to indicate the error recovery level in the request for acknowledgement of completion of the data transfer (page 222, Section "11.20 ErrorRecoveryLevel).

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Dailey whose telephone number is 571-270-1246. The examiner can normally be reached on Monday thru Friday; 9:00am - 5:00pm.
24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. J. D./
Examiner, Art Unit 2452

/Dohm Chankong/
Primary Examiner, Art Unit 2452